tranexamic acid  (tran-ex-am-il-ak-sid)
Cyklokapron, Lysteda

**Classification**
Therapeutic: hemostatic agents
Pharmacologic: antifibrinolytics, plasminogen inactivators

**Pregnancy Category B**

**Indications**
- IV: Prevention or reduction of hemorrhage during and following dental surgery in hemophiliacs.
- PO: Treatment of cyclic heavy menstrual bleeding.

**Action**
Inhibits activation of plasminogen, thereby preventing the conversion of plasminogen to plasmin.

**Therapeutic Effects:**
- Decreased bleeding following dental surgery in hemophiliacs.
- Reduced need for replacement therapy.
- Reduced menstrual blood loss.

**Pharmacokinetics**

- **Absorption:** 100% bioavailable with IV administration; 45% bioavailability after oral administration.
- **Distribution:** Penetrates readily into joint fluid and synovial membranes.
- **Metabolism and Excretion:** 95% excreted unchanged in urine.
- **Half-life:** 2 hr (IV) (in renal impairment); 11 hr (PO).

**TIME/ACTION PROFILE (blood levels)**

<table>
<thead>
<tr>
<th>Route</th>
<th>Onset</th>
<th>Peak</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>unknown</td>
<td>unknown</td>
<td>7–8 hr</td>
</tr>
<tr>
<td>PO</td>
<td>unknown</td>
<td>2.5 hr</td>
<td>unknown</td>
</tr>
</tbody>
</table>

**Contraindications/Precautions**
- **Contraindicated in:**
  - Hypersensitivity.
  - Thromboembolic disorders (current, history of, or at risk for).
  - Acquired defective color vision (IV).
  - Subarachnoid hemorrhage.
  - Conditions associated with thrombus formation.
  - Use of hormonal contraceptives (PO).
- **Usual Dosage:**
  - **IV (Adults and Children):** 10 mg/kg just prior to surgery with appropriate replacement therapy, then 10 mg/kg 3–4 times daily for 2–8 days.
  - **Renal Impairment:**
    - SCr 1.36–2.83 mg/dL — 10 mg/kg twice daily;
    - SCr 2.83–5.66 mg/dL — 10 mg/kg daily;
    - SCr > 5.66 mg/dL — 10 mg/kg every 48 hr or 5 mg/kg once daily.
  - **PO (Adults):** 1300 mg 3 times daily for a maximum of 5 days during menstruation.
  - **Renal Impairment:**
    - SCr 1.41–2.8 mg/dL — 1300 mg twice daily for a maximum of 5 days during menstruation;
    - SCr 2.81–5.7 mg/dL — 1300 mg daily for a maximum of 5 days during menstruation;
    - SCr > 5.7 mg/dL — 650 mg daily for a maximum of 5 days during menstruation.

**NURSING IMPLICATIONS**

- **Assessment:**
  - Prevention of post-surgical hemorrhage: Observe site of surgery for excessive bleeding.
  - Heavy menstrual bleeding: Monitor menstrual flow prior to and during therapy.
  - Patients taking tranexamic acid for more than several days should have ophthalmologic examinations to detect visual abnormalities prior to and at regular intervals during and after therapy. Discontinue therapy if visual changes occur.

**Potential Nursing Diagnoses**

- Risk for injury (Indications)
- Deficient knowledge, related to medication regimen (Patient/Family Teaching)

**Adverse Reactions/Side Effects**

- **CNS:** Headache, dizziness.
- **EENT:** Visual abnormalities.
- **CV:** Hypotension, thrombosis, thromboembolism.
- **GI:** Diarrhea, nausea, vomiting.
- **GU:** Anaphylaxis.

**Interactions**

- **Drug-Drug:**
  - Concurrent use of hormonal contraceptives may increase the risk of thrombosis (PO).
  - Concurrent use of clopidogrel, ticagrelor, prasugrel, or warfarin may increase the risk of thrombotic complications (pro tranexamic acid IV for following during factor replacement therapy).
  - May increase procoagulant effects of all-trans retinoic acid, interferes with thrombolytic agents.

**Route/Dosage**

- **PO (Adults):**
  - **Indications:** 1300 mg 3 times daily for a maximum of 5 days during menstruation.
  - **Renal Impairment:**
    - SCr 1.41–2.8 mg/dL — 1300 mg twice daily for a maximum of 5 days during menstruation;
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- Risk for injury (Indications)
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Implementation

- PO: Administer 3 times daily without regard to food. Swallow tablets whole; do not crush, break, or chew.

IV Administration

- Continuous Infusion: Diluent: May be diluted with most solutions, such as electrolyte, carbohydrate, amino acid, and dextran solutions. Prepare mixture on day of infusion. Rate: Infuse at a rate not to exceed 100 mg (1 mL)/min. More rapid administration has resulted in hypotension.

- Y-Site Compatibility: heparin

- Y-Site Incompatibility: ampicillin, ampicillin/sulbactam, blood, penicillin, potassium chloride, thiamine/riboflavin/ascorbic acid.

Patient/Family Teaching

- Instruct patient to take medication as directed; do not take more than 6 tablets/day, for longer than 5 days in any menstrual cycle, or when not menstruating. Take missed doses as soon as remembered, then take next dose at least 6 hrs later; do not double doses. Advise patient to read Patient Information before starting and with each refill because of changes.

- Advise patient to stop medication and inform health care professional of any change in vision. Inform patients on prolonged therapy of the importance of regular ophthalmic follow-up.

- Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and consult health care professional before taking any new medications. Caution patient to avoid taking hormonal contraceptives and products containing aspirin or NSAIDs without consulting health care professional.

- Instruct patient to notify health care professional if signs and symptoms of thrombosis (severe, sudden headache; pains in chest, groin, or legs, especially calves; sudden loss of coordination; sudden and unexplained shortness of breath; slurred speech; visual changes; weakness or numbness in arm or leg) or anaphylaxis (shortness of breath, throat tightness, rash) occur.

- Instruct patient to notify health care professional if heavy menstrual bleeding persists or worsens or if bleeding does not lessen after 2 cycles or tranexamic acid seems to stop working.

Evaluation/Desired Outcomes

- Prevention of hemorrhage during and following dental surgery in hemophiliacs.

- Reduced menstrual blood loss.

Why was this drug prescribed for your patient?